

Concurrence Point 3
Least Environmentally Damaging Practicable Alternative (LEDPA)

TIP Project No. U-5811
WBS 44384.1.1

SR 1002 (Aviation Parkway) Widening
From NC 54 to I-40
Wake County



July 2019

NCDOT Project Manager: April Annis, Project Management Unit
Consultant Project Manager: Teresa Gresham, Kimley-Horn

Purpose of Today's Meeting:

The purpose of this meeting is to discuss Concurrence Point 3,
selecting the LEDPA

1. Introduction and Project Overview

1.1 Meeting Purpose

The North Carolina Department of Transportation (NCDOT) proposes to widen SR 1002 (Aviation Parkway) from NC 54 to I-40 in Wake County. The proposed project is included in the NCDOT 2018-2027 State Transportation Improvement Program (STIP) as Project U-5811.

In accordance with the National Environmental Policy Act (NEPA)/Section 404 Merger Process, NCDOT is seeking consensus from the NEPA/404 Merger Team on CP 3 – Least Environmentally Damaging Practicable Alternative.

1.2 Project Description

Project U-5811 proposes to widen 2.4 miles of Aviation Parkway to a four-lane median-divided roadway with curb and gutter, including bicycle and pedestrian accommodations from NC 54 (Chapel Hill Road) in Morrisville to I-40 in Cary.

A locally administered project (U-5618) by the Town of Morrisville will widen Morrisville Carpenter Road from Davis Drive to the western North Carolina Railroad right of way, just west of NC 54. NCDOT Project I-5506 is under construction to modify the interchange of I-40 with Aviation Parkway, extending along Aviation Parkway to Gateway Centre Drive. Therefore, improvements as part of Project U-5811 are proposed to tie into the Morrisville Carpenter Road widening project just west of NC 54, and tie into the I-40 interchange project at Gateway Centre Drive.

Aviation Parkway is a major east-west route through the Town of Cary and the Town of Morrisville in Wake County. Aviation Parkway connects I-40 with downtown Morrisville, becoming Morrisville Carpenter Road west of NC 54. **Figure 1** shows the project vicinity, and **Figure 2A-C** shows the environmental and community features.

Aviation Parkway is a Minor Arterial that varies from two-lanes undivided to five-lanes undivided with a center left-turn lane at different points along the corridor. There is currently sidewalk along both sides of the road in the middle segment where businesses are located and near NC 54 where new neighborhoods have been built.

1.3 Schedule

- Environmental Document – August 2019
- Right of Way Acquisition – FY 2020
- Construction – FY 2023

1.4 Merger Process History (Concurrence Points 1, 2, and 2A)

Concurrence Point 1 & 2

On March 22, 2018, the NEPA/404 Merger Team met to discuss Purpose and Need and Study Area (CP 1) and Detailed Study Alternatives (CP 2), for the referenced project. The Merger Team agreed to the following:

Purpose and Need

The primary purpose of this project is to reduce congestion on Aviation Parkway in order to improve the LOS in the design year (2040) peak hours along the corridor and at signalized intersections. A secondary benefit of this project is to improve east-west mobility through Morrisville and to I-40 and I-540/NC 540.

Study Area Defined

The proposed study area is a 1,000-foot wide corridor, 500 feet on either side of the Aviation Parkway centerline, with a wider area around the NC 54 intersection, as shown on **Figure 1**.

Detailed Study Alternatives Carried Forward

- *Build Alternative 1: Widen Aviation Parkway to a four-lane median divided best fit section with a 23-foot median and multimodal accommodations.*
- *No Build Alternative: Aviation Parkway would remain in its current condition.*

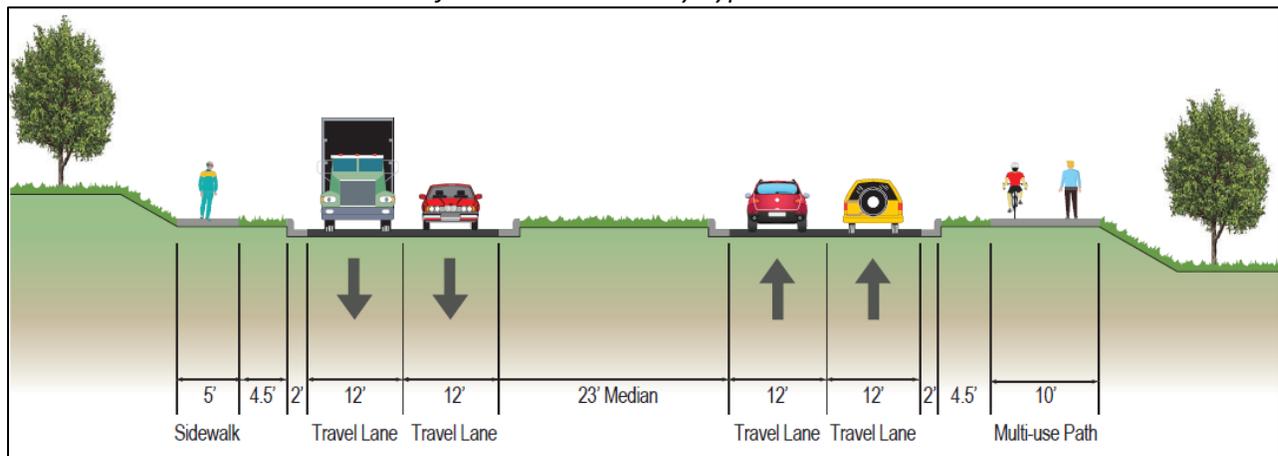
Concurrence Point 2A

On May 8, 2019 the NEPA/404 Merger Team met to discuss Bridging Decisions and Alignment Review (CP 2A), for the referenced project. The Merger Team agreed to the following:

Typical Section

The proposed typical section for Aviation Parkway was modified. The Aviation Parkway mainline typical section reduced the outside lanes from 14 feet to 12 feet as seen below:

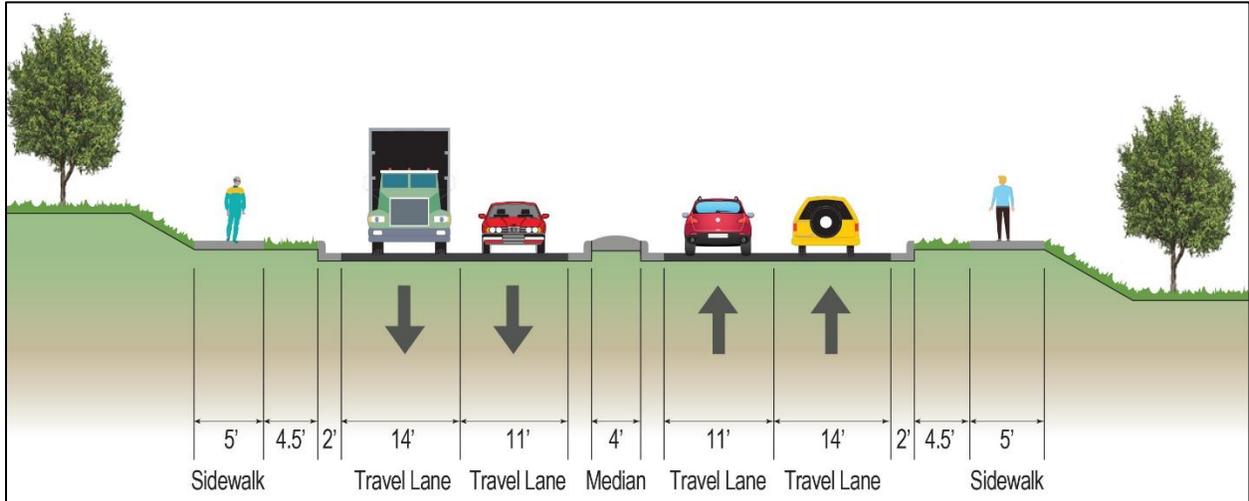
Modified Aviation Parkway Typical Section



NC 54/Railroad Crossing

NC 54 was proposed to be shifted approximately 20 feet east to create greater separation with the railroad crossing. The typical section along this segment was modified to match the Morrisville-Carpenter Road widening project and minimize the roadway width across the railroad. The proposed typical section is included on the following page.

Modified Aviation Parkway Typical Section Across NC 54 and the Railroad



Left-turns at the intersection will be redirected to a quadrant left loop. Two loop options were evaluated:

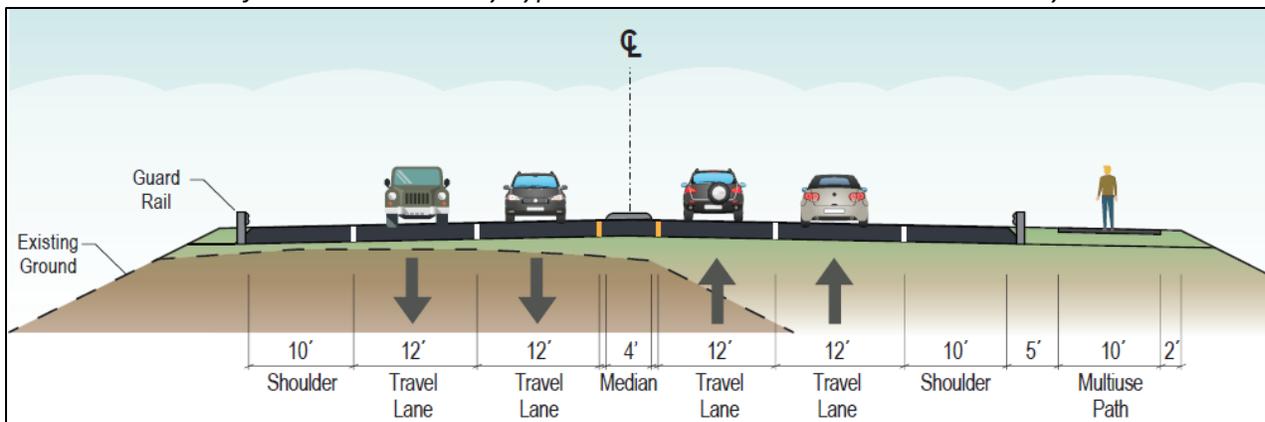
- **Option A** proposes to convert the existing intersection into a quadrant left intersection with the loop in the northeast quadrant of the intersection.
- **Option B** proposes to convert the existing intersection to a quadrant left intersection with the loop in the southeast quadrant of the intersection.

Lake Crabtree Causeway

A modified typical section was proposed across Lake Crabtree to minimize the footprint while maintaining consistency with the Town of Cary’s master plan. The proposed typical section includes two 12-foot travel lanes with 10-foot paved shoulders on each side and a 4-foot concrete island for approximately 0.5 miles. Additionally, a five-foot planting strip and a 10-foot multi-use path is proposed on the south side.

This design also modifies the shoulder to address drainage across the causeway. This includes paving the full shoulder width to the guardrail, selecting a cross-slope to help the water drain more quickly away from the lanes, and adding a vertical crest curve to reduce potential ponding. The revised typical section over the causeway is shown below.

Modified Aviation Parkway Typical Section Across Lake Crabtree Causeway



Major Hydraulic Structures

- Site 1 – Remove and replace existing culvert with 2 @ 8' x 8' RCBC
- Site 1A – Remove and replace existing culvert with 2 @ 10' x 7' RCBC OR change roadway grade and remove and replace existing culvert with 2 @ 8' x 8' RCBC
- Site 1B – Install 2 @ 8' x 8' RCBC
- Site 1C – Install 2 @ 8' x 8' RCBC
- Site 2 – Remove and replace existing culvert with 2 @ 72" RCPs
- Site 4 – Remove and replace existing culvert with 2 @ 8' x 7' RCBC
- Site 5 – Extend existing culvert outlet

Site 1A would only be required with Alternative A while Sites 1B and 1C would only be required with Alternative B.

2. Concurrence Point 3 – Least Environmentally Damaging Practicable Alternative

2.1 Public Involvement

A Local Officials Informational Meeting was held June 5, 2019 at the Town of Morrisville Town Hall with 30 local officials in attendance representing the Towns of Morrisville and Cary, Wake County, Natural Resources Conservation Service, and NCDOT. The Town of Morrisville expressed concerns over potential impacts to Cedar Fork District Park. A public meeting was held June 12, 2019 at the Town of Morrisville Town Hall with 60 members of the public in attendance. Input from the public was generally positive regarding the project. Preference on the loop alternative was divided, with concerns over potential impacts to adjacent properties and neighborhoods.

2.2 Impacts

A comparison of impacts is included in **Table 1**. Lake Crabtree and Crabtree Creek are flood-control facilities, and as such any impacts to the floodplain within an elevation of 284.9 feet will require compensatory flood storage mitigation within the flood pool at the same elevation that was filled. This mitigation may require additional impacts to jurisdictional features that is not captured below.

Table 1: Comparison of Impacts

Resource	Alternative A (Northern Loop)	Alternative B (Southern Loop)
Wetland WS	1.6 acres	1.6 acres
Wetland WT	0.1 acres	0.1 acres
Wetland Total	1.7 acres	1.7 acres
Lake Crabtree	1.7 acres	1.7 acres
Pond PA	0.6 acres	0 acres
Open Water Total	2.3 acres	1.7 acres
Stream SB	415 linear feet	445 linear feet
Stream SD	140 linear feet	140 linear feet
Stream SQ	85 linear feet	85 linear feet
Stream SP	155 linear feet	155 linear feet
Stream Total	795 linear feet	825 linear feet
Flood Control Facility*	0.6 acres	2.3 acres
Floodway	7.3 acres	7.2 acres
100-Year Floodplain	4.3 acres	5.1 acres
Park Impacts	Lake Crabtree Park – 0.9 acres	Lake Crabtree Park – 0.9 acres Cedar Fork District Park – 1.3 acres ¹

Impacts were calculated using proposed slope stakes plus 25 feet of the preliminary designs

**Total impacts will be re-calculated to include depth during final design*

¹Physical impacts from proposed design. Does not include loss-of-use associated with roadway.

2.3 Recommended Alternative

- *Build Alternative 1: Widen Aviation Parkway to a four-lane median divided best fit section with a 23-foot median and multimodal accommodations.*
 - *With a minimized typical section across the NC 54/Railroad intersection with two 11-foot travel lanes, two 14-foot outside travel lanes, a 4-foot median, and 5-foot sidewalks on both sides*
 - *With a minimize typical section across the Lake Crabtree causeway with four 12-foot travel lanes, 10-foot shoulders, a 4-foot median, and a 10-foot multiuse path on the east side*
- *Alternative A loop (northeast quadrant) at the Aviation Parkway/NC 54 intersection*

NCDOT recommends the Alternative A loop for the following reasons:

- No impacts to the flood control facility in the southeast quadrant of the intersection with NC 54
- No impacts to the Cedar Fork District Park
- Fewer anticipated stream impacts than Alternative B (795 feet vs. 825 feet) and same wetland impacts

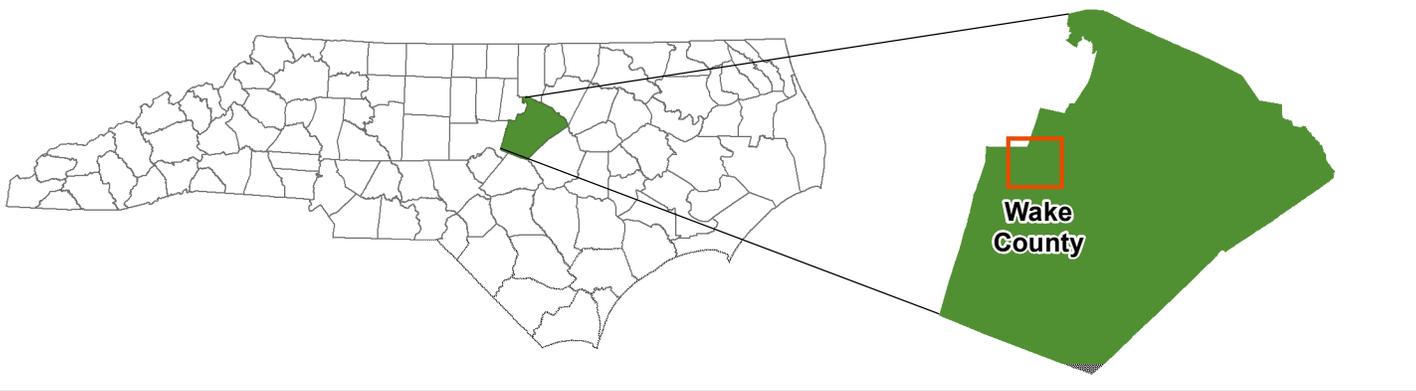
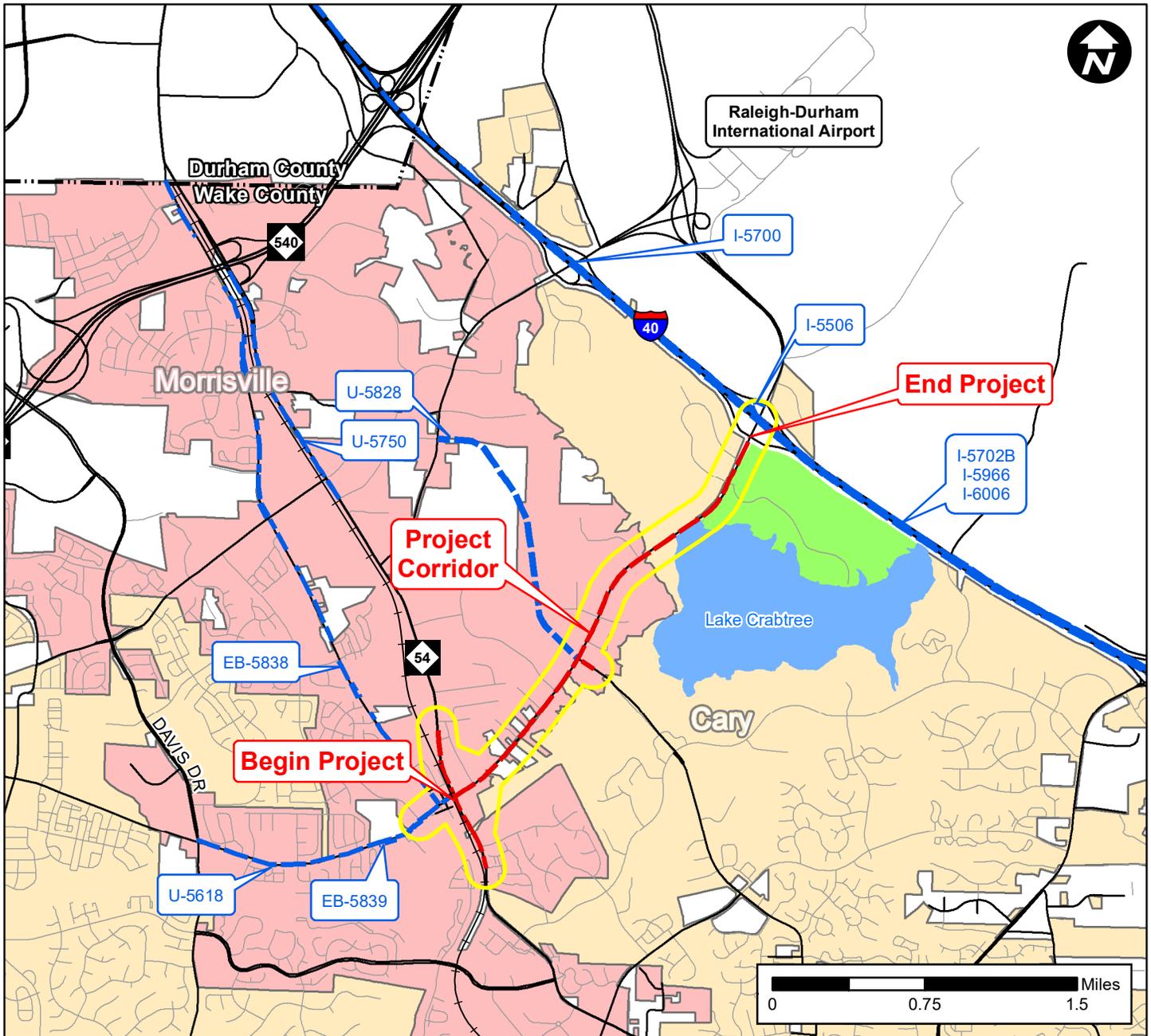
Figures

Figure 1: Project Vicinity

Figure 2A-2C: Environmental Features Map

Appendix

**Project U-5811
CP 3 Concurrence Form**





Project Study Area

Lake Crabtree County Park

Project Limits

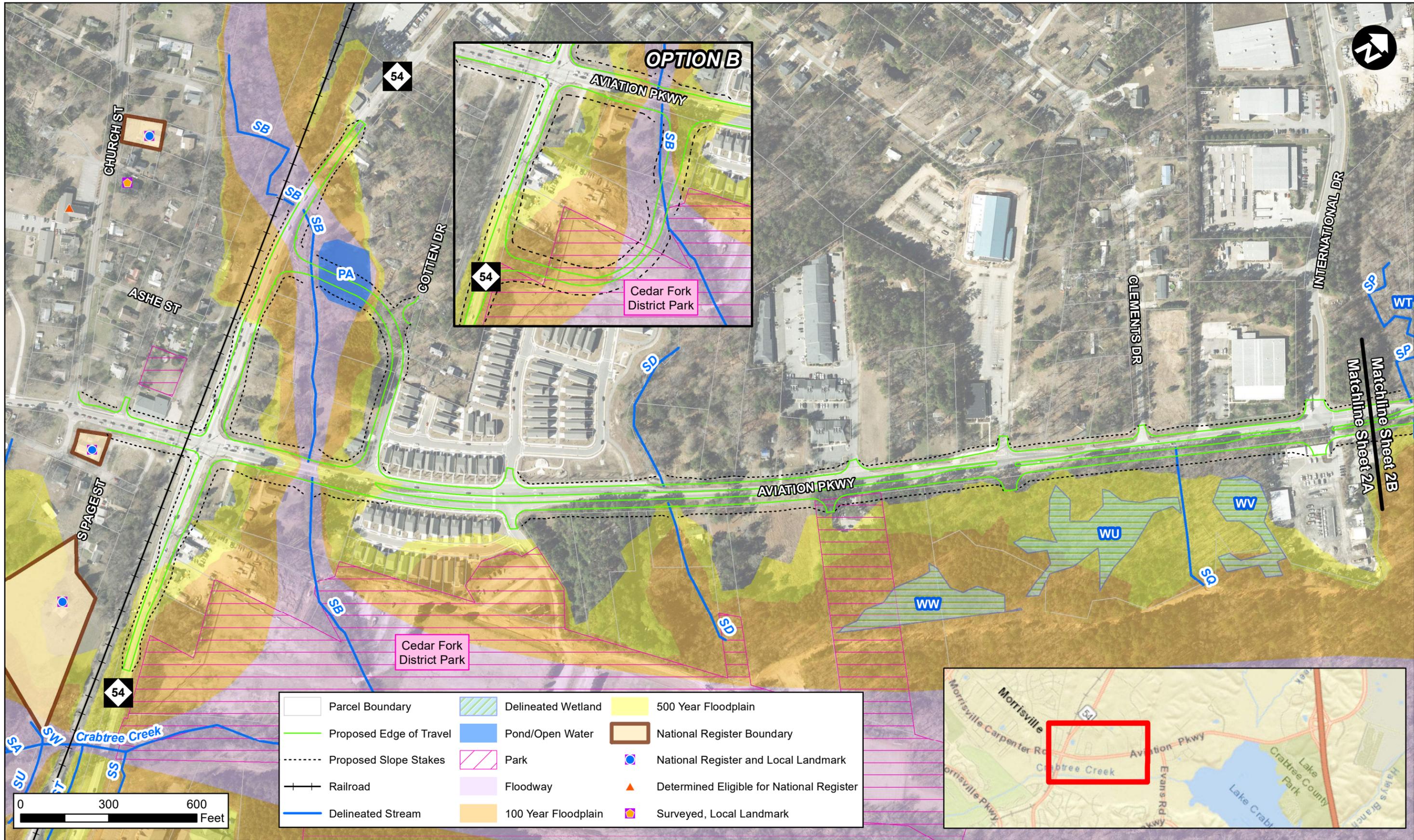
Town of Cary

Adjacent STIP Project

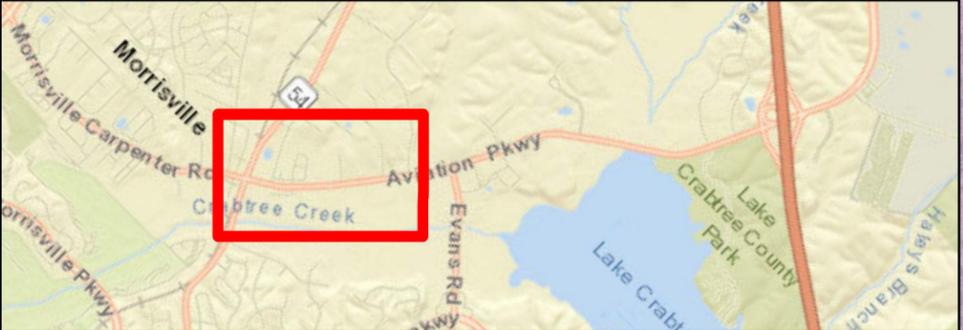
Town of Morrisville

+ +
Railroad

Figure 1 - Project Vicinity
 STIP No. U-5811
 SR 1002 (Aviation Parkway)
 Widening from NC 54 to I-40
 Morrisville/Cary, Wake County



Parcel Boundary	Delineated Wetland	500 Year Floodplain
Proposed Edge of Travel	Pond/Open Water	National Register Boundary
Proposed Slope Stakes	Park	National Register and Local Landmark
Railroad	Floodway	Determined Eligible for National Register
Delineated Stream	100 Year Floodplain	Surveyed, Local Landmark



**Aviation Parkway
Widening**
From NC 54 to I-40 in Wake County

Environmental Features Map

Figure 2A	U-5811
	Division 5

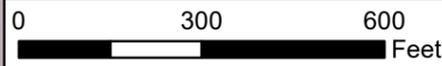
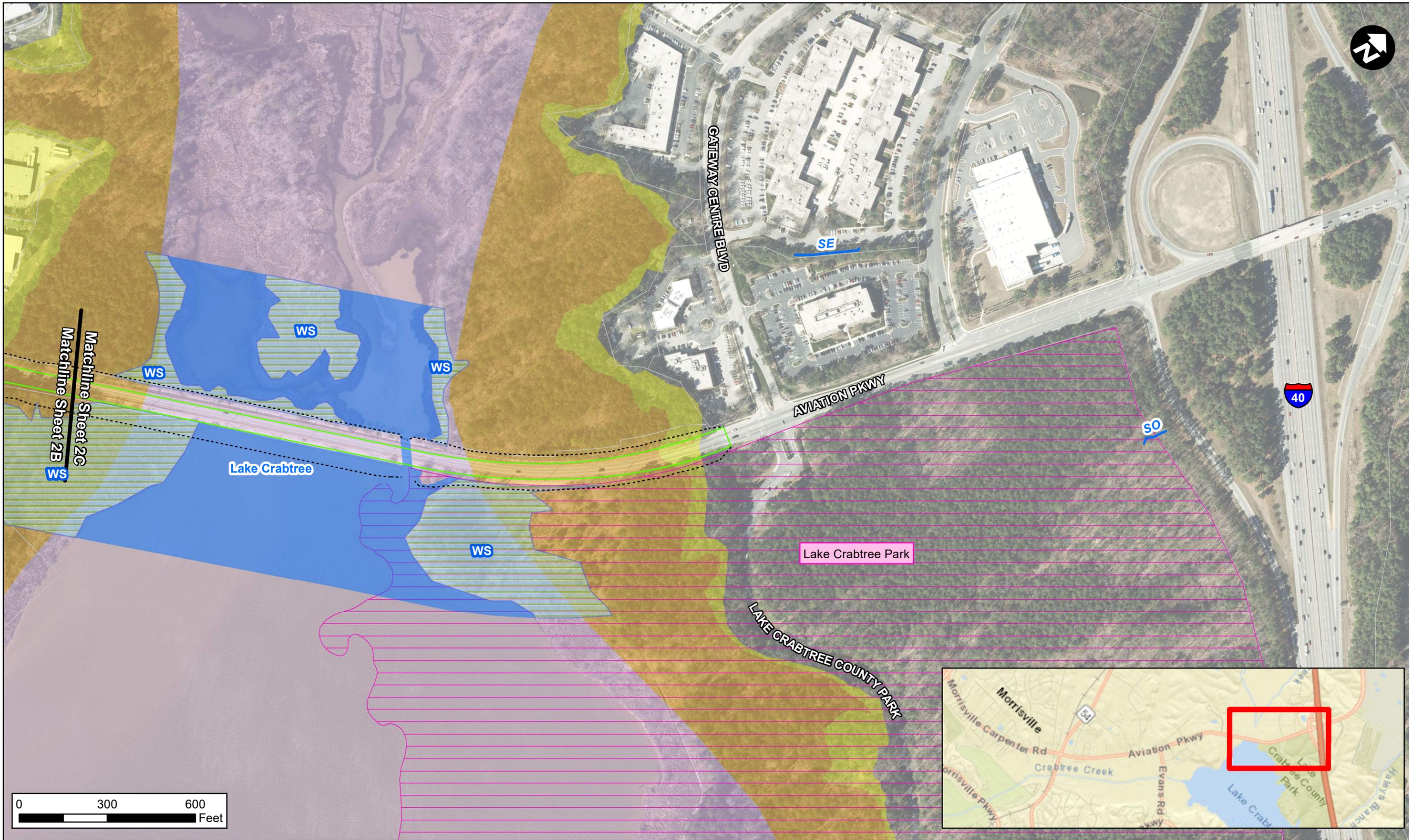


- Parcel Boundary
- Delineated Stream
- Floodway
- Proposed Edge of Travel
- Delineated Wetland
- 100 Year Floodplain
- Pond/Open Water
- 500 Year Floodplain
- Proposed Slope Stakes

**Aviation Parkway
Widening**
From NC 54 to I-40 in Wake County

Environmental Features Map

Figure 2B	U-5811
Division 5	



- Parcel Boundary
- Delineated Stream
- Park
- 500 Year Floodplain
- Proposed Edge of Travel
- Delineated Wetland
- Floodway
- 100 Year Floodplain
- Proposed Slope Stakes
- Pond/Open Water

**Aviation Parkway
Widening**
From NC 54 to I-40 in Wake County

Environmental Features Map

Figure 2C

U-5811
Division 5

Section 404/NEPA Interagency Agreement

**Concurrence Point 3
Lead Environmentally Damaging Practicable Alternative**

Project Title: SR 1002 (Aviation Parkway), Widening from NC 54 to I-40
TIP Project No.: U-5811
WBS No.: 44384.1.1

The Project Team has concurred on this date to select the following as the Least Environmentally Damaging Practicable Alternative:

- *Build Alternative 1: Widen Aviation Parkway to a four-lane median divided best fit section with a 23-foot median and multimodal accommodations.*
 - *With a minimized typical section across the NC 54/Railroad intersection with two 11-foot travel lanes, two 14-foot outside travel lanes, a 4-foot median, and 5-foot sidewalks on both sides*
 - *With a minimize typical section across the Lake Crabtree causeway with four 12-foot travel lanes, 10-foot shoulders, a 4-foot median, and a 10-foot multiuse path on the east side*
- *Alternative A loop (northeast quadrant) at the Aviation Parkway/NC 54 intersection*

Name	Agency	Date
_____	USACE	_____
_____	USEPA	_____
_____	USFWS	_____
_____	USDA - NRCS	_____
_____	NCDWR	_____
_____	NCDOT	_____
_____	NCSHPO	_____
_____	NCWRC	_____
_____	CAMPO	_____